

CLAIMS

1. (Previously Presented) An apparatus, wherein the apparatus is a temperature-independent microscopic switch, comprising:
 - a substrate, wherein the substrate is at least configured to support the switch;
 - a conductive beam, wherein the conductive beam is at least configured to be suspended from an anchor with one free end;
 - means for engaging, wherein the means for engaging at least engages the conductive beam to allow signal transmission; and
 - at least one tether, wherein the at least one tether is at least configured to be attached to a fixed location and attached to the conductive beam away from the anchor.
2. (Previously Presented) The apparatus of Claim 1, wherein the apparatus further comprises means for insulation, wherein the means for insulation at least provides a non-conductive barrier between the conductive beam and at least one electrode when the microscopic switch is engaged.
3. (Original) The apparatus of Claim 2, wherein the means for insulation further comprise air.
4. (Original) The apparatus of Claim 2, wherein the means for insulation further comprise Silicon Oxide (SiO_2).
5. (Original) The apparatus of Claim 2, wherein the means for insulation further comprise Silicon Nitride (Si_3N_4).

6. (Previously Presented) The apparatus of Claim 1, wherein the apparatus further comprises an ohmic contact at least during a portion of when the microscopic switch is engaged.

7-23. (Canceled)

24. (Currently Amended) A ~~cantilever~~ MEMS ~~device switch~~ comprising

a cantilever arm for completing an electrical path to at least a conducting surface, the cantilever arm having a portion attached to a substrate and a movable portion, which is suspended over the conducting surface;

~~and further comprising~~

a tether having at least two ends, wherein a first end of the tether is at least coupled to a fixed location on the MEM device, and wherein a second end of the tether is at least coupled to the movable portion of ~~the~~ cantilever arm~~;~~ and wherein the substrate is configured to be non-conductive.

25. (Canceled)

26. (Previously Presented) The ~~cantilever-MEMS switch device~~ of Claim 24, wherein the ~~apparatus device~~ further comprises means for insulation, wherein the means for insulation at least provides a non-conductive barrier when the ~~microscope-MEMS device switch~~ is engaged.

27. (Original) The ~~cantilever~~-MEMS ~~switch~~device of Claim 26, wherein the means for insulation further comprises air.
28. (Original) The ~~cantilever~~-MEMS ~~switch~~device of Claim 26, wherein the means for insulation further comprises Silicon Oxide (SiO_2).
29. (Original) The ~~cantilever~~-MEMS ~~switch~~device of Claim 26, wherein the means for insulation further comprises Silicon Nitride (Si_3N_4).
30. (Currently Amended) The ~~cantilever~~-MEMS device of Claim 24 wherein the ~~cantilever~~ MEMS device further comprises an ohmic contact at least during a portion of when the ~~cantilever~~-MEMS device ~~switch~~ is engaged.
- 31-37. (Canceled)
38. (Previously Presented) The apparatus of Claim 1, wherein the anchor comprises a mechanical post coupled to a proximal end of the conductive beam and coupled to the substrate, the proximal end being opposite the free end of the conductive beam, whereby, the mechanical post anchors the conductive beam.

39. (New) A method of operation of a temperature-independent microscopic switch, comprising:

moving a suspended beam portion of a fixed-free micromechanical beam used to complete an electrical path with an actuating force applied along the suspended beam portion;

and

limiting movement of the suspended beam portion of the fixed-free micromechanical beam with a tether attached to the fixed-free micromechanical beam at a point different than an attachment point for an anchor.

40. (New) The method of Claim 39, wherein limiting movement of the suspended beam portion of the fixed-free micromechanical beam comprises limiting movement of a cantilevered beam.

41. (New) The method of Claim 39, wherein limiting movement of the suspended beam portion comprises limiting curling movement of the fixed-free micromechanical beam.

42. (New) The method of Claim 39, the method further comprising the tether providing a gap limit for the fixed-free micromechanical beam.